

REMARKS

By the above amendments, the title has been amended to that suggested by the Examiner, and informalities in the specification have been corrected, including the utilization of reference numerals 109 and 110, it being noted that reference numeral 109 is representative of the angle θ , while reference numeral 110 is representative of the angle θ_{LC} . Thus, the objection to the drawings as including reference numerals 109 and 110 without mention in the description should now be overcome, and Applicants submit that a proposed drawing correction and/or corrected drawings is unnecessary. Furthermore, the Abstract has been amended to overcome informalities noted therein, including reducing the word count to 150. Additionally, the claims have been amended to overcome the objections noted by the Examiner, with independent Claims 1 and 16 being amended to recite further features of the present invention, as will be discussed below. With regard to the objections to Claims 34 and 35, Applicants note that the Examiner questions the terminology of "oblique," and by the present amendment, Claims 34 and 35 have been amended to recite the feature that the three primary color beams have optical axes which are incident upon the respective liquid crystal display elements, in directions oblique to the liquid crystal display elements, and thereby, Applicants submit that the objections to Claims 34 and 35 should now be overcome. Furthermore, as noted above, the other claims have been amended to correct the points noted by the Examiner. As such, all claim objections should now be overcome.

Turning to the amendments of Claims 1 and 16, as described at page 11, lines 11 *et seq.* in connection with FIG. 1A, for example, either of the optical axis of an

incident beam 105 and the optical axis of an emergent beam 106 is present in a plane which is orthogonal to the direction of orientation of the liquid crystal molecules, and makes a predetermined angle θ with respect to the direction normal to the reflection substrate 102. Thus, in accordance with the present invention, both the optical axis of the incident light beam 105 and the optical axis of the emergent light beam 106 are present in the plane which is substantially perpendicular to the direction of orientation of the liquid crystal molecules, as now recited in independent Claims 1 and 16, and the incident light beam impinges on the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction of the normal line of the substrate. With this configuration, in which the incident light beam is incident upon the liquid crystal layer with the predetermined angle (θ or 109), the orientation of the liquid crystal molecules which are homogenously oriented in a liquid crystal layer can be controlled at a low voltage as described in the specification of this application. Thus, the response time of a liquid crystal can be reduced, and accordingly, the liquid crystal drive voltage can be remarkably lowered.

Applicants submit that the aforementioned features are now recited in independent Claims 1 and 16 and dependent claims of this application, and that such features are not disclosed or taught in the cited art, as will become clear from the following discussion.

The rejection of Claims 1 and 16 under 35 USC §102(e) as being anticipated by Kubo *et al.* (US 2001/0024257 A1); the rejection of Claims 2, 13, and 17 under 35 USC §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.* (US 6,348,959 B1); the rejection of Claims 3-6, 18-21, 30 and 31 under §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.*, and further in view of Okada

(US 6,542,211 B1); the rejection of Claims 7, 8, 22 and 23 under §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.* and Okada, and further in view of Kitagish Nozomi (JP 07-318861); the rejection of Claims 9-12 and 24-27 under §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.* and Okada, and further in view of Ichikawa *et al.* (US 6,473,144 B1); the rejection of Claims 14, 15, 32 and 33 under §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.*, and further in view of Tanaka (US 5,895,108 A); the rejection of Claims 28 and 29 under §103(a) as being unpatentable over Kubo *et al.* in view of Melnick *et al.* and Okada, and further in view of Inoko (US 6,417,941 B1); and the rejection of Claims 34-37 under §103(a) as being unpatentable over Kubo *et al.* in view of Miyake *et al.* (US 5,729,306 A): such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, as to the requirements to support a rejection under 35 USC §102, reference is made to the decision of *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 USC §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the Court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is “inherent” in its disclosure. To establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” Moreover, the Court pointed out that inherency, however, may not be established by

probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 USC §103, reference is made to the decision *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a *prima facie* case of obviousness, and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the Court, whether a particular combination might be “obvious to try” is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. As further noted by the Court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision in *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), wherein the Court, in reversing an obviousness rejection, indicated that deficiencies of the cited reference cannot be remedied with conclusions about what is “basic knowledge” or “common knowledge.”

The Court pointed out:

The Examiner’s conclusory statements that “the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software” and that “another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial” do not adequately address the issue of motivation to combine. This factual question of motivation is

immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of reference, simply to "[use] that which the inventor taught against its teacher."...Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

In applying Kubo *et al.* to the claimed invention, the Examiner refers to Figure 57 thereof and, utilizing the previous claimed features of Claim 1, for example, contends that such features are found in Figure 57 of Kubo *et al.* Applicants submit that the Examiner has attributed features to Kubo *et al.* which are not disclosed in Kubo *et al.*, noting that Applicants have been unable to find any description of Figure 57 in Kubo *et al.* other than in the brief description of the drawings, which indicates that "[0112] FIG. 57 schematically illustrates a display operation when a voltage is applied across a liquid crystal layer in a refraction region of the liquid crystal display device 1000." Contrary to the position set forth by the Examiner, that "an optical axis of an incident light beam upon the liquid crystal layer is present in a plane which is substantially perpendicular to a direction of orientation of liquid crystal molecules on at least one of the two substrates (liquid crystal molecule 30a) (referring to the left hand side of Figure 57), and the incident light impinges upon the liquid crystal layer in a direction which is inclined by a predetermined angle to the direction of the normal line of the substrate (Figure 57)," Applicants submit that it is not seen that such features are disclosed in the sense of 35 USC §102, and in particular, Applicants submit that Claims 1 and 16 as amended, which recite the feature that an optical axis of an emergent light beam from the liquid crystal layer is present in a plane which is substantially perpendicular to a direction of orientation of liquid crystal

molecules on at least one of the two substrates in addition to the previously-claimed features concerning the incident light beam, is not disclosed in the sense of 35 USC §102 or taught in the sense of 35 USC §103. Assuming *arguendo* that the Examiner intends that such features are inherent in Figure 57 of Kubo *et al.*, as pointed out in the decision of *In re Robertson, supra*, inherency cannot be shown by speculation on the part of the Examiner. Applicants submit that Kubo *et al.* fails to disclose or teach the claimed features of independent Claims 1 and 16 and the dependent claims of this application, and all claims patentably distinguish over Kubo *et al.* in the sense of 35 USC §102 and 35 USC §103.

With respect to the secondary references which are utilized in conjunction with Kubo *et al.*, Applicants submit that the secondary references fail to overcome the deficiencies of Kubo *et al.* as pointed out above, and the Examiner's comments concerning the secondary references and the proposed combinations while failing to provide the claimed features as set forth in independent Claims 1 and 16 and the dependent claims, represents the principle of "obvious to try," which is not the standard of 35 USC §103 (see *In re Fine, supra*). Furthermore, as to the Examiner's comments with respect to some of the secondary references, Applicants submit that, here again, the Examiner attributes features not disclosed or taught in the secondary references, and proposes combinations based on obvious to try, which again, is not proper (see *In re Lee, supra*). Thus, Applicants submit that the proposed combination of references fails to provide the claimed features as set forth in independent Claims 1 and 16 and the dependent claims in the sense of 35 USC §103, and Applicants submit that all claims present in this application patentably distinguish over the proposed combinations of Kubo *et al.* with any one of the

secondary references, taken alone or in the combinations as proposed by the Examiner, such that all claims should be considered allowable thereover.

In view of the above amendments and remarks, Applicants submit that all claims present in this application should now be in condition for allowance, and issuance of an Action of a favorable nature is respectfully requested.

Attached hereto is a Petition for Extension of Time Under 37 CFR §1.136 and Form PTO-2038 authorizing payment of the requisite Petition fee (Code 1253). To whatever other extent is actually appropriate, Applicant respectfully petitions the Commissioner for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper to ATS&K Deposit Account No. 01-2135 (referencing Case No. 500.41256X00).

Respectfully submitted,



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ATTACHMENTS:
Petition for Extension of Time
Form PTO-2038 (Fee Code 1253)